

## DATA SHEET

# AS229-350, AS229-350LF: GaAs IC SPDT Nonreflective Switch 300 kHz–6 GHz

**Features**

- Low DC power consumption
- High isolation, nonreflective
- Broadband 300 kHz–6 GHz
- Excellent intermodulation products
- Small, low-cost plastic package
- Available lead (Pb)-free and RoHS-compliant MSL-1 @ 260 °C per JEDEC J-STD-020

**Description**

The AS229-350 is an IC FET SPDT switch in a low-cost plastic package. It features nonreflective matching at each output, and broadband performance, with very low DC power consumption. This switch can be used in many analog and digital wireless communication systems.

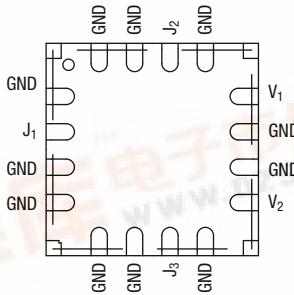
**NEW** Skyworks offers lead (Pb)-free, RoHS (Restriction of Hazardous Substances)-compliant packaging.

**Electrical Specifications at 25 °C**

Parameter <sup>(1)</sup>	Frequency	Min.	Typ.	Max.	Unit
Insertion loss <sup>(2)</sup>	300 kHz–1 GHz 300 kHz–2 GHz 300 kHz–4 GHz 300 kHz–6 GHz		0.8 0.9 1.4 1.8	1.0 1.2 1.5 2.0	dB
Isolation	300 kHz–1 GHz 300 kHz–2 GHz 300 kHz–4 GHz 300 kHz–6 GHz	51 47 35 20	55 50 40 25		dB
Return loss	300 kHz–1 GHz 300 kHz–2 GHz 300 kHz–4 GHz 300 kHz–6 GHz		20 20 10 12		dB

1. All measurements made in a 50 Ω system, unless otherwise specified.

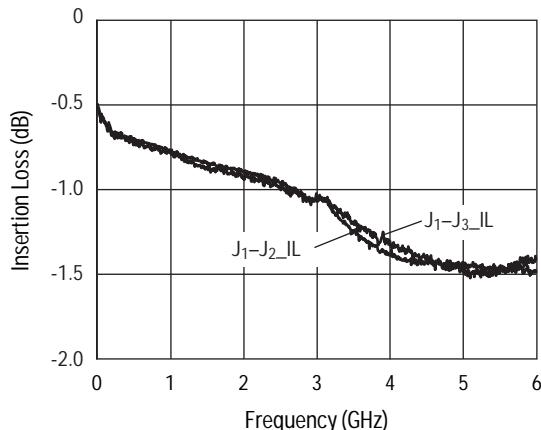
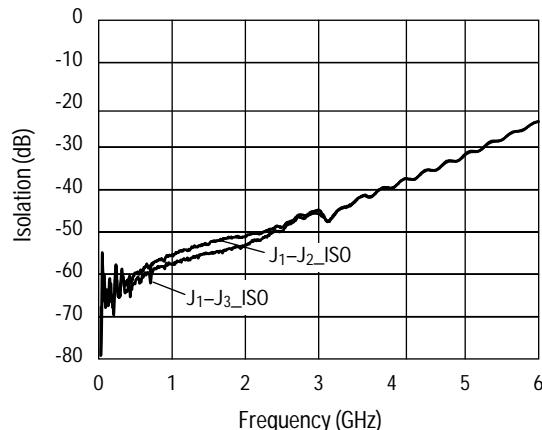
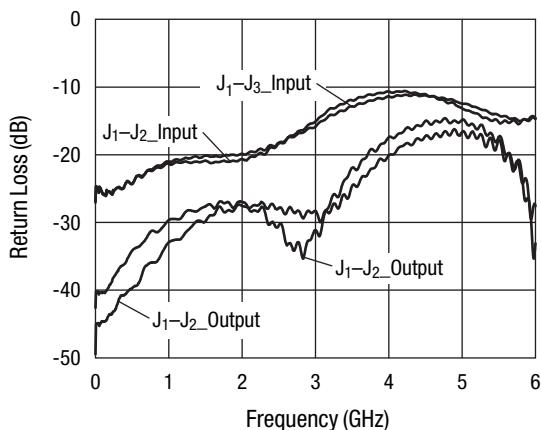
2. Insertion loss changes by 0.003 dB/°C.

**Pin Out (Top View)**

Exposed paddle should be grounded.

**Operating Characteristics at 25 °C**

Parameter	Condition	Frequency	Min.	Typ.	Max.	Unit
Switching characteristics						
Rise, fall	10/90% or 90/10% RF)			3		ns
On, off	50% CTL to 90/10% RF)			6		ns
Video feedthru	$T_{RISE} = 1$ ns, BW = 500 MHz			15		mV
Input power for 1 dB compression		0.5–6 GHz 0.05 GHz		24 16		dBm dBm
Intermodulation intercept point (IP3)	For two-tone input power 13 dBm	0.5–6 GHz		46		dBm
Thermal resistance				25		°C/W
Control voltages	$V_{LOW} = 0$ to -0.2 V @ 20 $\mu$ A max. $V_{HIGH} = -5$ V @ 50 $\mu$ A to -8 V @ 200 $\mu$ A max.					

**Typical Performance Data****Insertion Loss vs. Frequency****Isolation vs. Frequency****Return Loss vs. Frequency**

## Absolute Maximum Ratings

Characteristic	Value
RF input power (RF In)	2 W max. > 500 MHz 0/-8 V Control
Control voltage (V <sub>C</sub> )	-0.2 V, -10 V
Operating temperature (T <sub>OP</sub> )	-40 °C to +85 °C
Storage temperature (T <sub>ST</sub> )	-65 °C to +150 °C

Performance is guaranteed only under the conditions listed in the specifications table and is not guaranteed under the full range(s) described by the Absolute Maximum specifications. Exceeding any of the absolute maximum/minimum specifications may result in permanent damage to the device and will void the warranty.

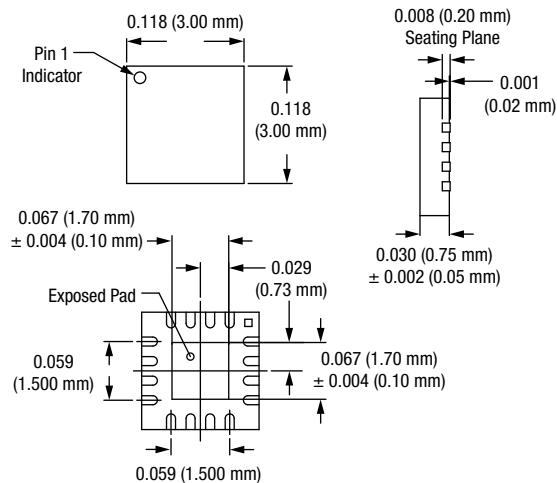
**CAUTION:** Although this device is designed to be as robust as possible, ESD (Electrostatic Discharge) can damage this device. This device must be protected at all times from ESD. Static charges may easily produce potentials of several kilovolts on the human body or equipment, which can discharge without detection. Industry-standard ESD precautions must be employed at all times.

## Truth Table

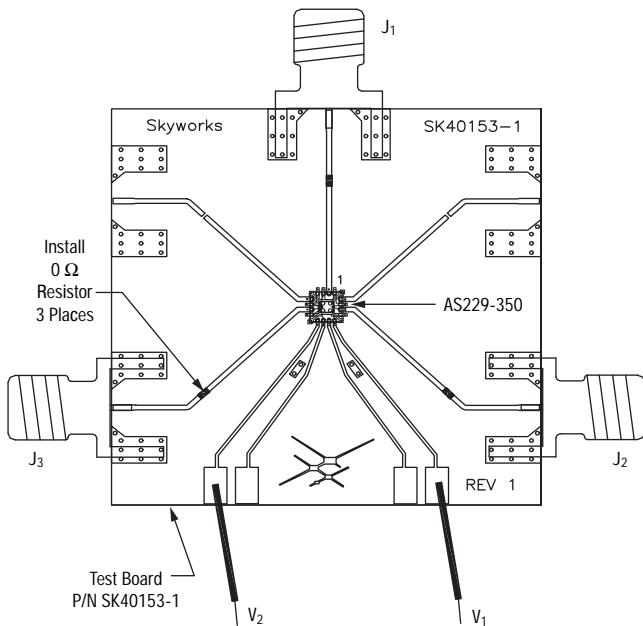
V <sub>1</sub>	V <sub>2</sub>	J <sub>1</sub> -J <sub>2</sub>	J <sub>1</sub> -J <sub>3</sub>
-5	0	Isolation	Insertion Loss
0	-5	Insertion Loss	Isolation

All other conditions not recommended.

## -350 (QFN 3 x 3)



## Evaluation PCB



## Recommended Solder Reflow Profiles

Refer to the "[Recommended Solder Reflow Profile](#)" Application Note.

## Tape and Reel Information

Refer to the "[Discrete Devices and IC Switch/Attenuators Tape and Reel Package Orientation](#)" Application Note.

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